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                  thesaurus
 NEWS 8 OCT 21 Derwent World Patents Index Coverage of Indian and
                  Taiwanese Content Expanded
 NEWS 9 OCT 21 Derwent World Patents Index enhanced with human
                  translated claims for Chinese Applications and
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 NEWS 10 NOV 23 Addition of SCAN format to selected STN databases
 NEWS 11 NOV 23 Annual Reload of IFI Databases
 NEWS 12 DEC 01 FRFULL Content and Search Enhancements
 NEWS 13 DEC 01 DGENE, USGENE, and PCTGEN: new percent identity
                  feature for sorting BLAST answer sets
 NEWS 14 DEC 02 Derwent World Patent Index: Japanese FI-TERM
                  thesaurus added
 NEWS 15 DEC 02 PCTGEN enhanced with patent family and legal status
                  display data from INPADOCDB
 NEWS 16 DEC 02 USGENE: Enhanced coverage of bibliographic and
                  sequence information
 NEWS 17 DEC 21 New Indicator Identifies Multiple Basic Patent
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                  in CA/CAplus

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=> S (ompt protease or protease VII)
L1        302 (OMPT PROTEASE OR PROTEASE VII)

=> S P1 (P) P1'
MISMATCHED QUOTE 'P1''
Quotation marks (or apostrophes) must be used in pairs,
one before and one after the expression you are setting
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=> S P1 (P) (P1')
MISMATCHED QUOTE 'P1')'
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one before and one after the expression you are setting
off or masking.
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=> S P1 (P) "P1'"
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'P1 (P) "P1'"'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'P1 (P) "P1'"'
L2      194244 P1 (P) "P1'"

=> s l1 and l2
L3          19 L1 AND L2

=> s l3 and P3
L4           4 L3 AND P3

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ENTER L# LIST OR (END):l4
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PROCESSING COMPLETED FOR L4
L5           3 DUPLICATE REMOVE L4 (1 DUPLICATE REMOVED)

=> d l5 1-3 bib ab
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L5   ANSWER 1 OF 3   HCAPLUS   COPYRIGHT 2009 ACS on STN
AN   2007:92182   HCAPLUS
DN   146:332984
TI   Substrate specificity of the Escherichia coli outer membrane protease OmpP
AU   Hwang, Bum-Yeol; Varadarajan, Navin; Li, Haixin; Rodriguez, Sarah;
      Iverson, Brent L.; Georgiou, George
CS   Institute for Cellular and Molecular Biology, University of Texas, Austin,
      TX, 78712, USA
SO   Journal of Bacteriology (2007), 189(2), 522-530
      CODEN: JOBAAY; ISSN: 0021-9193
PB   American Society for Microbiology
DT   Journal
LA   English
AB   Escherichia coli OmpP is an F episome-encoded outer membrane protease that
      exhibits 71% amino acid sequence identity with OmpT. These two enzymes
      cleave substrate polypeptides primarily between pairs of basic amino
      acids. We found that, like OmpT, purified OmpP is active only in the
      presence of lipopolysaccharide. With optimal peptide substrates, OmpP
      exhibits high catalytic efficiency (kcat/Km = 3.0+106 M-1 s-1).
      Anal. of the extended amino acid specificity of OmpP by substrate phage
      revealed that both Arg and Lys are strongly preferred at the P1
      and P1' sites of the enzyme. In addition, Thr, Arg, or Ala is
      preferred at P2; Leu, Ala, or Glu is preferred at P4; and Arg is preferred
      at P3'. Notable differences in OmpP and OmpT specificities
      include the greater ability of OmpP to accept Lys at the P1 or
      P1', site as well as the prominence of Ser at P3 in OmpP
      substrates. Likewise, the OmpP P1 site could better accommodate
      Ser; as a result, OmpP was able to cleave a peptide substrate between
      Ser-Arg about 120 times more efficiently than was OmpT. Interestingly,
      OmpP and OmpT cleave peptides with three consecutive Arg residues at
      different sites, a difference in specificity that might be important in
      the inactivation of cationic antimicrobial peptides. Accordingly, we show
      that the presence of an F' episome results in increased resistance to the
      antimicrobial peptide protamine both in ompT mutants and in wild-type E.
      coli cells.
OSC.G   7   THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)
RE.CNT 39   THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L5    ANSWER 2 OF 3  HCAPLUS   COPYRIGHT 2009 ACS on STN DUPLICATE 1
AN    2005:300594  HCAPLUS
DN    142:368184
TI    Production of biol. active polypeptides by the proteolysis of recombinant
      synthetic polypeptide precursors by the OmpT protease
      variants
IN    Okuno, Kazuaki; Yabuta, Masayuki
PA    Daiichi Suntory Pharma Co., Ltd., Japan
SO    PCT Int. Appl., 107 pp.
      CODEN: PIXXD2
DT    Patent
LA    Japanese
FAN.CNT 1
      PATENT NO.           KIND   DATE        APPLICATION NO.        DATE
      ---------------      ----   --------    --------------------   --------
PI    WO 2005030956        A1     20050407    WO 2004-JP14704        20040929
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
             CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
             LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
             NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
             TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
             AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
             EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,
             SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
             SN, TD, TG
      AU 2004276687        A1     20050407    AU 2004-276687         20040929
      CA 2540446           A1     20050407    CA 2004-2540446        20040929
      EP 1674567           A1     20060628    EP 2004-773628         20040929
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK
      BR 2004014611        A      20061107    BR 2004-14611          20040929
      CN 1860226           A      20061108    CN 2004-80028525       20040929
      KR 2006089724        A      20060809    KR 2006-705984         20060327
      US 20070077617       A1     20070405    US 2006-573821         20060328
PRAI  JP 2003-342183       A      20030930
      WO 2004-JP14704      W      20040929
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
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AB   The proteolytic method for producing biol. active polypeptides (ACTH
      (1-24), motilin or calcitonin) from recombinant synthetic precursor
      polypeptides or fusion proteins by using OmpT protease
      mutants has been developed. The synthetic precursor polypeptides or
      fusion proteins (22 .apprx. 45 a.a. (amino acid)) have been designed
      according to the substrate specificities of the OmpT
      protease mutants. Synthetic substrate polypeptides have Arg or
      Lys at P1 site and the a.a. other than Asp, Glu or Pro at the
      P1' site. The substrate polypeptides have one, two or serial
      three basic a.a. in the P10 .apprx. P3, P10 .apprx. P3
      ' or P10 .apprx. P5' (more specifically in the P5 .apprx. P3
      site), however the sites P6 and P4 are excluded if only one basic a.a. in
      the sequence. The fusion protein substrates with protection peptide
      having C-terminal Arg or Lys have N-terminal a.a. such as Phe, Ala, Ser,
      Cys or Tyr and the other a.a. excluding Asp, Glu and Pro. These preferred
      P5 .apprx. P1 sequence and P7 .apprx. P1 sequence in
      the synthetic precursor polypeptides or fusion proteins are
      Arg-Arg-Arg-Ala-Arg and Asp-Ala-Arg-Arg-Arg-Ala-Arg, resp. Introduction
      of acidic a.a. typically Asp to the P3 site can repress the
      digestion by the OmpT proteases. The OmpT protease

variants that can be used in the proteolysis system have a.a variation at
      the 97th position. The 97th a.a. is Leu, Met or His and the other a.a.
      including Ala, Phe, Ser, Thr, Cys, Asn, Gln, and Glu. The vector encoding
      the fusion substrate protein containing human glucagon, motilin, ACTH or
      calcitonin was designed to satisfy the structural condition claimed above
      and expressed in the inclusion body of E. coli and the cleaving of biol.
      active peptides from the substrate fusion proteins by the recombinant
      OmpT protease variant was demonstrated. The performance
      of the coexpression system of the substrate fusion protein and
      OmpT protease variant in the biol. active peptide
      generation was also demonstrated.

L5   ANSWER 3 OF 3 HCAPLUS   COPYRIGHT 2009 ACS on STN
AN   2004:734580 HCAPLUS
DN   141:390901
TI   Substrate specificity of the Escherichia coli outer membrane protease OmpT
AU   McCarter, John D.; Stephens, Daren; Shoemaker, Kevin; Rosenberg, Steve;
      Kirsch, Jack F.; Georgiou, George
CS   Department of Molecular and Cell Biology, University of California,
      Berkeley, CA, USA
SO   Journal of Bacteriology (2004), 186(17), 5919-5925
      CODEN: JOBAAY; ISSN: 0021-9193
PB   American Society for Microbiology
DT   Journal
LA   English
AB   OmpT is a surface protease of gram-neg. bacteria that has been shown to
      cleave antimicrobial peptides, activate human plasminogen, and degrade
      some recombinant heterologous proteins. We have analyzed the substrate
      specificity of OmpT by two complementary substrate filamentous phage
      display methods: (i) in situ cleavage of phage that display
      protease-susceptible peptides by Escherichia coli expressing OmpT and (ii)
      in vitro cleavage of phage-displayed peptides using purified enzyme.
      Consistent with previous reports, OmpT was found to exhibit a virtual
      requirement for Arg in the P1 position and a slightly less
      stringent preference for this residue in the P1' position (
      P1 and P1' are the residues immediately prior to and
      following the scissile bond). Lys, Gly, and Val were also found in the
      P1' position. The most common residues in the P2' position were
      Val or Ala, and the P3 and P4 positions exhibited a preference
      for Trp or Arg. Synthetic peptides based upon sequences selected by
      bacteriophage display were cleaved very efficiently, with kcat/Km values
      up to 7.3 + 106 M-1 s-1. In contrast, a peptide corresponding to
      the cleavage site of human plasminogen was hydrolyzed with a kcat/Km
      almost 106-fold lower. Overall, the results presented in this work
      indicate that in addition to the P1 and P1' positions,
      addnl. amino acids within a six-residue window (between P4 and P2')
      contribute to the binding of substrate polypeptides to the OmpT binding
      site.

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L6   424 (ASP97 OR D97 OR (APARTIC ACID NEAR2 "97"))

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L7          4 L6 (P) L1

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L8          4 L6 AND L1

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L9          1 DUPLICATE REMOVE L8 (3 DUPLICATES REMOVED)

=> d l9 bib ab
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L9   ANSWER 1 OF 1 SCISEARCH COPYRIGHT (c) 2009 The Thomson Corporation on
     STN   DUPLICATE 1
AN   2004:92146 SCISEARCH
GA   The Genuine Article (R) Number: 763RY
TI   Utilization of Escherichia coli outer-membrane endoprotease OmpT variants
     as processing enzymes for production of peptides from designer fusion
     proteins
AU   Okuno K (Reprint)
CS   Daiichi Suntory Pharma Co Ltd, Inst Med Res & Dev, 2716-1 Kurakake, Gunma
     3700503, Japan (Reprint)
AU   Yabuta M; Ooi T; Kinoshita S
CS   Daiichi Suntory Pharma Co Ltd, Inst Med Res & Dev, Gunma 3700503, Japan;
     Hokkaido Univ, Grad Sch Engn, Div Mol Chem, Kita Ku, Sapporo, Hokkaido,
     Japan
CYA Japan
SO   APPLIED AND ENVIRONMENTAL MICROBIOLOGY, (JAN 2004) Vol. 70, No. 1, pp.
     76-86.
     ISSN: 0099-2240.
PB   AMER SOC MICROBIOLOGY, 1752 N ST NW, WASHINGTON, DC 20036-2904 USA.
DT   Article; Journal
LA   English
REC Reference Count: 30
ED   Entered STN: 6 Feb 2004
     Last Updated on STN: 6 Feb 2004
     ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB   Escherichia coli outer-membrane endoprotease OmpT has suitable
     properties for processing fusion proteins to produce peptides and
     proteins. However, utilization of this protease for such production has
     been restricted due to its generally low cleavage efficiency at Arg (or
     Lys)-Xaa, where Xaa is a nonbasic N-terminal amino acid of a target
     polypeptide. The objective of this study was to generate a specific and
     efficient OmpT protease and to utilize it as a
     processing enzyme for producing various peptides and proteins by
     converting its substrate specificity. Since OmpT Asp(97) is proposed to
     interact with the P1' amino acid of its substrates, OmpT variants with
     variations at Asp97 were constructed by replacing this amino
     acid with 19 natural amino acids to alter the cleavage specificity at Arg
     (P1)-Xaa (P1'). The variant OmpT that had a methionine at this position,
     but not the wild-type OmpT, efficiently cleaved a fusion protein
     containing the amino acid sequence -Arg-Arg-ArgAla-Arg down arrow motilin,
     in which motilin is a model peptide with a phenylalanine at the N
     terminus. The OmpT variants with leucine and histidine at position 97
     were useful in releasing human adrenocorticotropic hormone (1-24) (serine
     at the N terminus) and human calcitonin precursor (cysteine at the N

terminus), respectively, from fusion proteins. Motilin was produced by this method and was purified up to 99.0% by two chromatographic steps; the yield was 160 mg/liter of culture. Our novel method in which the OmpT variants are used could be employed for production of various peptides and proteins.

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